

[REAL-TIME MONITORING AND CONTROL OF RESERVOIR FLUID SAMPLE CAPTURE]

Abstract

A method of sampling reservoir fluid includes establishing communication between a reservoir and an entry port of a flow line disposed in a borehole penetrating the reservoir. The method includes separating fluid received in the entry port into individual fluid components and sequentially flowing slugs of each individual fluid component along the flow line, observing the slugs as they move along the flow line in order to determine the composition of the slugs, estimating when a desired slug containing a desired fluid component would be in the vicinity of a sample chamber in the flow line, and opening the sample chamber to capture the desired slug when the desired slug is in the vicinity of the sample chamber. The method also includes checking that the sample chambers open and close successfully. Finally, the method further includes creating an accurate record of events, which can then be used to audit the sampling process.